

REMARKS

Applicants respectfully request a continued examination on the Application and consideration of the subject Application as amended herein. This Amendment is submitted in response to the Office Action mailed August 23, 2006. Claims 1, 2, 5-9, 22, 37, 38, 40-41, 48, 56-60, 105-107 and 111 are pending. In this Amendment, claims 1, 5, 37 and 111 have been amended and no new matter is added by the amendments.

In response to the Office Action's comment in page 8 in regards to the limitation of the conductive medium having a thickness of 1 micron or less in claim 106, Applicants respectfully submit that the dimension is an important aspect to make the device as thin as possible.

Rejections under 35 U.S.C. § 102

Claims 1-2, 5-8, 22, 37, 40-41, 48, 56, 58-60, 105 and 111 are rejected under 35 U.S.C.

§102(e) as being anticipated by WO 2001/62517 (Akita).

Independent claims 1, 37 and 111

Amended independent claims 1, 37 and 11 include the limitation "... a thin-film planarization dielectric layer formed directly over a portion of the integrated circuit and a portion of the substrate extending beyond edges of the integrated circuit; a conductive medium, covering at least a portion of the integrated circuit and a portion of the first substrate, formed directly over the thin-film dielectric layer and attached to the conductive pad via a contact hole, the conductive medium having a greater surface area than the conductive pad, wherein the conductive medium is a conductive paste ..."

(Emphasis added)

Akita discloses a noncontact ID card and a method of manufacturing such

noncontact ID card. Akita describes a noncontact ID card to be composed by laminating an antenna circuit board and an interposer board (Col. 3 lines 51-53). The antenna circuit board and the interposer board are bound by an electrically conductive adhesive agent.

Applicants submit that Akita fails to anticipate all the limitations included in the amended independent claims 1, 37 and 111.

First, the amended claims have the limitation of a “thin-film planarization dielectric layer”. The Office Action dated Aug 23, 2006 stated that the epoxy resin layer is a dielectric layer. Applicants respectfully submit that the epoxy resin layer is not the same as a “thin-film planarization dielectric layer”. Akita’s epoxy resin layer is a photosensitive epoxy resin layer. An epoxy resin may perform a similar function to insulate like a dielectric layer, but an epoxy resin is quite different than a thin-film planarization dielectric layer.

In Akita, the insulation layer is the glass passivation layer (Figure 12, Col. 8 lines 46-55) and the epoxy resin is used to fix the embedded IC in the opening of the substrate. An epoxy resin is applied using a non-vacuum process, generally at or near atmospheric pressure as known by one skilled in the ordinary art. On the contrary, the Applicants specifically claim a “thin-film planarization dielectric layer”. Particularly, in the specification, paragraph [0041], the Applicants distinguish the differences between a thin-film process and a thick-film process, “thin-films can be applied only through the use of vacuum or low-pressure processes.” Therefore, a “thin-film dielectric layer” is different from that of a regularly applied epoxy resin layer applied using a non-vacuum process at or near atmospheric pressure.

Second, this thin-film planarization dielectric layer is formed directly over a portion of the integrated circuit and a portion of the substrate extending beyond edges of

the integrated circuit, as seen in at least Figures 1, 2, 9 and 10 of the Application. This planarization layer serves as a foundation structure to the conductive medium which is placed directly over the thin-film planarization dielectric layer. The planarization layer provides electrical insulation and creates a level surface on top of the substrate by filling in the portions of the receptor regions that are not filled by integrated circuits. In contrast, Akita describes in at least Figures 5, 9, 11 and 12 that a UBM layer (19) is placed directly above the electrode (12a, 12b) of only the IC (4), where a glass passivation (22) and an epoxy resin layer or solder resist (20) is placed directly over the glass passivation layer both covering only the IC. Therefore, the glass passivation layer and the epoxy resin layer fail to cover any portion of the substrate extending beyond edges of the IC. As such, Akita does not anticipate the limitation of a thin-film planarization dielectric layer is formed directly over a portion of the integrated circuit and a portion of the substrate extending beyond edges of the integrated circuit.

Third, Applicants claim “...a conductive medium, covering at least a portion of the integrated circuit and a portion of the first substrate extending beyond edges of the integrated circuit, formed directly over the thin-film dielectric layer and attached to the conductive pad via a contact hole, the conductive medium having a greater surface area than the conductive pad, wherein the conductive medium is a conductive paste ...” The conductive medium is formed directly over the thin-film planarization dielectric layer and is not in direct contact with the IC or the substrate. On the contrary, Akita describes an expanded electrode (11a, 11b) in at least Figures 1, 3, and 10 that is directly in contact with the substrate and the IC without a planarization layer. Akita fails to disclose that in the case where the top surface of the IC is flush with the substrate surface, a thin-film planarization dielectric layer provides a foundation structure for the conductive medium

and insulates this conductive medium from the IC and the substrate. Even in the case as discussed in the previous paragraph where the IC is buried deep into the substrate where the top surface is not flush with the substrate surface, although the electrode is placed over portions of the IC and the substrate, Akita still fails to anticipate all the limitations of the claims because the electrode is attached to the contact pad of the IC through a structure built up from a UBM layer and a second conductive layer. In other words, Akita does not describe a thin film planarization dielectric layer that covers portions of both the IC and the substrate extending beyond edges of the integrated circuit, and, the conductive medium is not a “conductive paste” which “attached to the conductive pad via a contact hole”, as claimed by the Applicants.

As such, Applicants submit that Akita fails to anticipate all of the limitations as claimed in amended independent claims 1, 37 and 11 and respectfully request the withdrawal of the claim rejections.

Dependent claims 2, 5-8, 22, 40-41, 48, 56, 58-60 and 105

Dependent claims 2, 5-8, 22, 40-41, 48, 56, 58-60 and 105 depend from amended independent claims 1 and 37. For at least this reason, Applicants respectfully request the withdrawal of the claim rejection.

Rejections under 35 U.S.C. § 103

Claim 9 and 57 are rejected under 35 U.S.C. §103(a) as being unpatentable over Akita.

Dependent claims 9 and 57

Akita fails to anticipate or teach all the limitations as disclosed in amended

independent claims 1 and 37. Claims 9 and 57 depend from amended independent claims 1 and 37. For at least this reason, Applicants submit that claims 9 and 57 are patentable over Akita and respectfully request the withdrawal of the claim rejections.

Claim 106 is rejected under 35 U.S.C. §103(a) as being unpatentable over Akita.

Dependent claim 106

Akita fails to anticipate or teach all the limitations as disclosed in amended independent claims 1. Claim 106 depends from amended independent claim 1. For at least this reason, Applicants submit that claim 106 is patentable over Akita and respectfully request the withdrawal of the claim rejection.

Claim 107 is rejected under 35 U.S.C. §103(a) as being unpatentable over Akita in view of Fjelstad (U.S. Pat. No. 6,211,572).

Dependent claim 107

Akita fails to anticipate or teach all the limitations as disclosed in amended independent claim 1. Fjelstad fails to teach or suggest the limitations as claimed in amended independent claim 1 and thus fails to cure the deficiency of Akita.

Claim 107 depend directly from amended independent claim 1. For at least this reason, Applicants submit that claim 107 is patentable over Akita in view of Fjelstad and respectfully request the withdrawal of the claim rejection.

CONCLUSION

Applicants respectfully submit that in view of the amendments and arguments set forth herein, the rejections herein have been overcome. Accordingly, it is believed that all claims now pending patentably define the subject invention over the prior art of record and are in condition for allowance and such action is earnestly solicited at the earliest possible date. If the Examiner determines the prompt allowance of these claims could be facilitated by a telephone conference, the Examiner is invited to contact Arthur Au at (408) 720-8300.

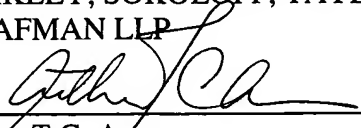
Deposit Account Authorization

Authorization is hereby given to charge our Deposit Account No. 02-2666 for any charges that may be due.

Respectfully submitted,

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